Air Photo Interpretations Of Land Use In The Central Interior Of British Columbia 1945 to 1955

by

L. E. PHILPOTTS

CANADA DEPARTMENT OF AGRICULTURE
Marketing Service, Economics Division
Ottawa

/12

JUNE 1957

TABLE OF CONTENTS

INTRODUCTION

This report deals with the methods of interpreting air photos and the use of these photos to measure improved and cultivated acreages in the central interior plateau of British Columbia. The various sectors of the central interior region were photographed and in a few cases rephotographed, from 1945 to 1955.

Checking data, on the ground, will ensure a maximum degree of accuracy. However, in the absence of ground checks, air photos may quickly supply a fairly accurate knowledge of the acreage surveyed within a project area if relevant data on geology, pedology, climate and cultural and natural vegetation are collected and correctly interpreted.

Agencies concerned with drainage, geological, pedological and forestry work resort to the collection of "ground check" data and the interpreting of air photo data, before a visit to a particular area. The preliminary information thus obtained will be used in deciding if the proposed survey area should be eliminated or included in the program of work. The use of air photos may then result in considerable savings of dollars and time spent on travelling and organizing survey work.

DESCRIPTION OF AREA

Most of the areas, in the central interior of British Columbia, for which land use was interpreted by means of aerial photos, are included on the soil reconnaissance map sheets for Terrace, Bulkley, Francois Lake, Nechako and Prince George.1/ No soil reconnaissance maps were available for the areas from Willow River to Hansard Lake and along the Fraser River from Tete Jaune to Longworth. Nevertheless, land form and soil textural interpretations were made for these areas.

The central interior areas are also shown in the federal topographical map series of Prince Rupert-Stewart (103/NE), Smithers-Fort St. James (93/NW), Ocean Falls--Ootsa Lake (93/SW), Prince George-Dawson Creek (93/NE) and Williams Lake-Prince George (93/SE).

The geographical location of these areas is indicated in Figure 1.

GEOLOGY, SOILS AND CULTURAL VEGETATION

The following notes on the geology, soils, vegetation and climate of the project area were abstracted from the British Columbia Soil Survey Reports, No. 2 and No. 4. They were used by the air photo interpreter in making his "ground checks".

Geology.- In the Pleistocene or glacial era in central British Columbia, the greatest accumulation of ice was on the Coast Mountains. Ice also accumulated on the Rocky Mountains, Omineca Mountains and other ranges of the north central interior of British Columbia. Comparatively little glacier ice-forming occurred in the Nechako plain and plateau. As the mountain ice fields grew, the ice flowed out from them in all directions. On the Coast and the Rocky Mountains this movement was mainly easterly and westerly and on the Omineca Mountains mainly northerly and southerly. The large valley glaciers coalesced in the low-lying Nechako plateau and plain. During the maximum development the ice moved across the low-lying Nechako plateau and plain in a general easterly and northeasterly direction. The ice flowing easterly from the Coast Mountains, much the greatest source of ice, controlled the movement of the ice from the Coast Mountains to the Rocky Mountains.

Two major advances of the ice sheet have been recognized in the Nechako plateau and plain. During the first advance of the ice, most of the rock debris was eroded from the weathered outcrop and deposited in the low-lying areas, the greatest accumulation of till being in the Nechako plain. Most of the till consisted of material coming from the west of the plain.

1/ Reports Nos. 2 and 4 of the British Columbia Soil Survey, Experimental Farms Service, Canada Department of Agriculture, in co-operation with the University of B.C. and the B.C. Department of Agriculture.

Following the first major advance of the ice sheet, with its resultant scouring of bedrock, a recession of the ice sheet occurred in the Nechako plateau and plain. This was followed by a readvance of the ice across the Nechako plateau and plain. This later advance of the ice may be traced by the trend of the drumlins and striae, at the close of which the compound eskers and glacial lakes were formed. As evidenced by the elongation of the drumlins and the parallel groovings, the ice generally moved from the Coast Mountains east to the Rocky Mountains. This last advance of the ice was apparently followed by stagnation and decay of the ice sheet in the Nechako plateau and plain.

Soils and Cultural Vegetation.- The glacial till deposits vary in composition, texture, depth and compactness. The till of the drumlinized plain is composed mainly of a loam, sandy loam or gravelly loam surface that grades abruptly into a compacted and impervious grayish-brown boulder clay. This parent material produced different types of soil series; the Chilako, covered by the forest as long as the demand for agricultural land does not call for its transfer to agriculture; the Barrett, suitable for the growth of alfalfa, clover, timothy and brome; and the Driftwood, appropriate to the culture of alfalfa, timothy and brome. In the Coast Mountain valleys the till deposits are very limited in extent, having been reworked by stream action or buried at considerable depths.

During the late Pleistocene a great glacial lake or string of lakes extended along the Fraser, Nechako and Stuart rivers. Their presence today is manifested in the great thickness of stratified sand, silts, and clays and in the basins occupied by these rivers. Soils developed on these deposits - their characteristic vegetation is indicated within parentheses - include the Vanderhoof (cereals, alfalfa, clover, timothy), Nulki (oats, barley, alfalfa, clover, grasses), Pineview (oats, clover, timothy), Bednesti (grains, legumes, grasses), Prairiedale (grains, legumes, grasses), Lakelse (coarse grains, grasses), and Telkwa (grains, alfalfa, brome, timothy).

Glacial outwash sands and gravels occur in the form of eskers, fans, delta plains and outwash. They are composed of stratified sands and gravels. The soils associated with the outwash deposits include the Eena (generally best suited for forestry purposes), and Mapes (generally should be left under native vegetation) series.

Alluvial terraces, flood plains and alluvial fans occur in the river valleys and former drainage channels. In age they vary from late glacial to recent. The Saxton (retained in forest), Braeside (shrubs, grasses - poor agricultural soil), Skeena (fodder crops, potatoes, fruit trees), Moricetown (forage crops, coarse grains), and Kispiox (not well suited for agriculture - areas too small to justify improvement), represent the sandy and gravelly soils.

The Fraser (legumes, grasses), Nechako (legumes, grasses), Giscome (best suited to forestry) and McCully (oats, clover, timothy) represent the lighter loamy soils.

The organic deposits are confined to the depressions in which the drainage has been restricted. Their accumulation has resulted in the formation of peaty (wild hays, pastures) and muck (clover, timothy, native grasses) meadows.

The physiographic divisions and glacial geology of the central interior regions of British Columbia are depicted in Figure 2. A description of the soils is found in the soil reports of the British Columbia Soil Survey.

PROCUREMENT, SCALE AND DATE OF PHOTOS

Most of the project area is covered by photos taken by the Royal Canadian Air Force or private companies under contract to the federal government. Two small areas, one in the vicinity of Fort St. James and the other in the vicinity of Fort Fraser, are covered by photos taken by the Province of British Columbia or private companies under contract to the province. Copies of the federal photos were obtained from the National Air Photo Library, Department of Mines and Technical Surveys, Ottawa and copies of the provincial photos from the Air Photo Library, Surveys and Mapping Branch, Department of Lands and Forest, Victoria.

The scale of the photos used in the project area varied from 1320 feet-to-the-inch (1"/15840") through 2,640 feet-to-the-inch (1"/31680") to 5,280 feet-to-the-inch (1"/63360"). There are three main reasons for differences in the scale of the photos within the area. First, the height of the surrounding mountains of the area demands higher flying so that the mountainous areas can be efficiently mapped stereoscopically and, thus, photos for the inter-valley areas have to be on a comparatively smaller scale. Second, many professional agencies prefer the smallest scales; for example, geological agencies like to have a great panorama in one photo instead of incurring the cost and inconvenience of preparing a photo mosaic even if minute details are lost in the small scaled photos. Third, speed and efficiency are secured by the use of small scaled photos for numerous and vast unused and unpopulated areas.

Available photos, covering the project area, were taken in recent years -- from 1945 to 1955 - and most of the area was covered from 1951 to 1955. A few sectors have had two different yearly coverages; the Terrace-Remo sector was covered in 1946 and 1955, the Prince George-Reid Lake sector in 1948 and 1953 and the Rock Lake to Hexon sector in 1945 and 1954. Unfortunately, the photos were not generally taken at the most opportune season or crop-growing period of the year. Detailed identifications, particularly of hay, pasture and grain fields, are thus hampered by this unsatisfactory timing of the photographic coverage.

LINEAL AND AREA MEASUREMENTS

The scale of an aerial photo is subject to several factors. First, a decision must be made concerning the general scale at which a project area is to be photographed, that is, whether the photos are to be 1,320 feet-to-the-inch , 2,640 feet-to-the-inch or smaller-scale photos. Second, the relief may change continuously within a given area and the scale will then increase or decrease depending on the rise or fall of the ground. Third, each photo is subject to personal and mechanical flying errors.

Individual photos, over the project area, were scaled in three different ways. First, a reliable bench mark designating the height of the land was located within the photo and the scale of the photo was then computed geometrically. Briefly, the scale of the photo is computed by dividing the fractional focal length into the exact height of the focal point or camera lens above the bench mark on the ground. The exact height above the ground is found by subtracting the height of the bench mark from the exact height of the aircraft above sea level at the given photo time. The fractional focal length and flying data can be obtained from the National Air Photo Library. Second, large scale maps were available and known objects on the maps could be placed against the same objects in the photos. The scale of the photo was then computed by the ratio method. Third, where it was impossible to determine the scale by the above methods, the photos were scaled from one to another from a known scaled photo , in order to fix the scale of the photo in use.

Twenty-five autopositive and hand-made transparent grids were constructed, for the measurement of acreages. The small scaled photo grids were constructed to measure a unit of 2.5 acres and the large scaled photo grids constructed to measure a unit of either 0.625 or 0.156 acres.

Clumps of trees, stone piles and clusters of buildings were eliminated from the measurement, when found within the cultivated areas.

INTERPRETATIONS

The interpretations of the aerial photos were limited because of the many small scaled photos and the many out-of-season or growing period photos. These interpretations are given under five main headings, as indicated in the Tables; namely, "Hays, pastures, grains, new breaking, local gardens,""Brush clearing", "Thinned, ready for brush clearing", "Rough pasture, etc.", and "Muck or marsh hays, etc". There were areas where the hays, pastures, grains, new breaking and local gardens could have been interpreted separately but these were spasmodic. So, it was decided to hold to the one over-all heading.

A measurement was made of the orchard acreage in the Terrace-Remo area.

"Hays, pastures, grains, new breaking, local gardens". - For the seasonal interpretational techniques concerning the hays, pastures and grains, the reader is referred to the publication "Elementary Agricultural Air Photo Intepretation"1/ and to the section on "Soil and Cultural Vegetation" previously mentioned as a ground-check. Local gardens include the small domestic gardens, usually found adjacent to the farm buildings, and the larger gardens that may or may not be used for production purposes. The small scaled photos made the interpretations of the gardens very difficult. New breaking is recognized, during any time of the photo season, by the abrupt dark and light tones caused by the unweathered or new appearance of the previously undisturbed soil and the short surface vegetation. Sometimes, systematically piled brush, or other brush heaps, may be seen in newly broken fields.

Brush Clearing.- The areas in the process of being brush cleared can be identified at any time during the photo season. The brush piles in their many man-made patterns are recognized in all the large and small-scaled photos.

Thinned, ready for brush clearing.- There are three ways of identifying the thinned or cut-out areas that are ready for brush clearing. First, the areas are always found on soils that would be used for cultivation in that particular area. Second, the boundaries, the occasional wood or brush pile and the occasional trail show the man-made features. Third, they do not have the irregular boundary of a burned-over area or the spotty appearance of an area that is being cut for lumber or firewood.

Rough Pastures, etc.- The heading "Rough Pastures, etc." includes interpretations for the land used for rough pasture and the rough land that might allow cultivation with a minimum of clearing. However, the latter areas were few. Needless to say, most of the rough land or pasture will remain in the stony, stumpy, grassy, rough land state. Occasionally, the rough pasture appeared as though it may have been broken at one time.

Muck or Marsh Hays.- The "Muck or Marsh Hays" identification includes the hays found on the many marsh type land forms. The topographical location, drainage and even the marsh type vegetation readily identify these areas. The interpretations include the very small amount of muck soils on the edges of the marshes and the muck areas found in association with the poorly drained areas of heavier textured soils.

Orchards.- The orchard acreage was measured and a count of the fruit trees was made in the Terrace area only. Using large scaled 1946 photos 108 acres were measured on Skeena sandy loam, 18 acres on Lakelse clay, and 11 acres on alluvial terraces, flood plains and fans. The number of fruit trees was interpreted to be 4,864, of which 4,745 were mostly mature, 72 presumed abandoned, and 47 on the alluvial soils. The trees, presumed abandoned, were found on the occasional farm that was interpreted to be abandoned, or found in small orchards

1/ Packman, D.J. and Philpotts, L.E.: "Elementary Agricultural Air Photo Interpretation", Economics Division, Canada Department of Agriculture, Ottawa, December 1955.

where the vegetation had been left to grow unattended. The apple trees could have been distinguished from the other fruit trees, if an actual ground-check could have been made. The 1955 photos, covering the same 1946 Terrace area, were not efficient in their interpretational use unless the large scaled photos were used as a guide. It was impossible to count the fruit trees in the 1955 very small scaled photos, as may be seen in Figure 4. The over-all 1955 acreage remained the same as the 1946 acreage.

SUMMARY

All the interpreted areas were accessible by roads of some sort, from the small woods road to the main highways. In the improvement or relocation of the present roads or the building of new roads, aerial photos would play a primary part. They could be used in the interpretation of the best topographical locations or relocations, the recognition of the immediate land forms and the location of granular and fill materials, for road construction purposes.

As the boundaries on an efficiently scaled (for instance one mile-to-the-inch) soil reconnaissance map can only be drawn in a general way, it can be seen that the aerial photo is the next step in depicting the finer boundary changes.

In addition to its use for the interpretations of cultivated areas, the aerial photo is also a most efficient tool for interpretations of areas that could be cleared and cultivated. An analysis may be made as to the type of heavy or light machinery that may be used to clear the land.

It may also be used for the rapid identification of areas subject to erosion by field gullying. There are many such areas, within the project, especially in the Nechako plain. An analysis should be made as to the type of vegetative cover or method and direction of plowing to be employed in these areas.

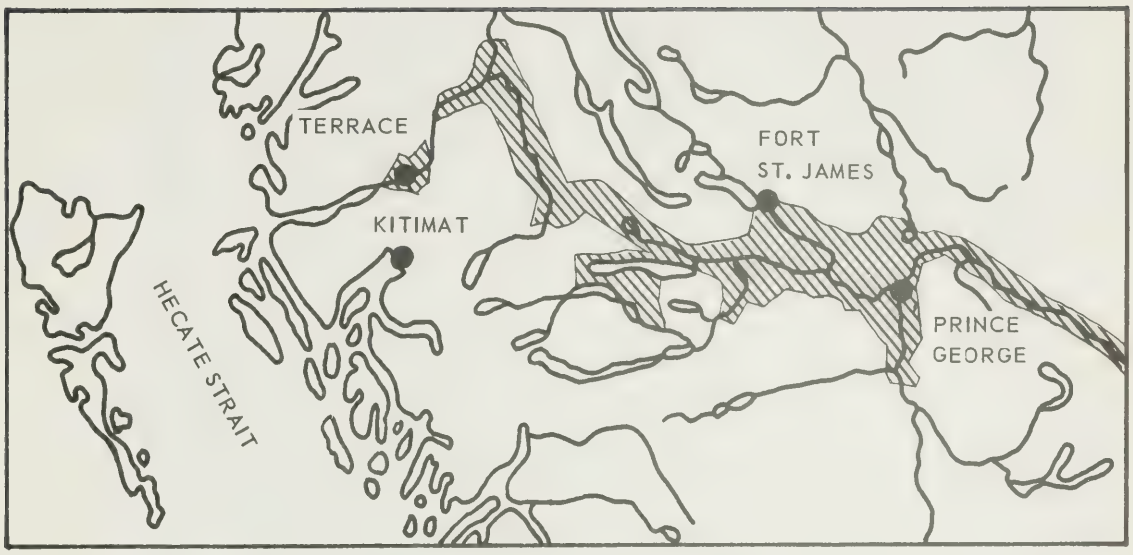

Figure 1 - The hatched sectors indicate the geographical locations of the central areas in British Columbia.

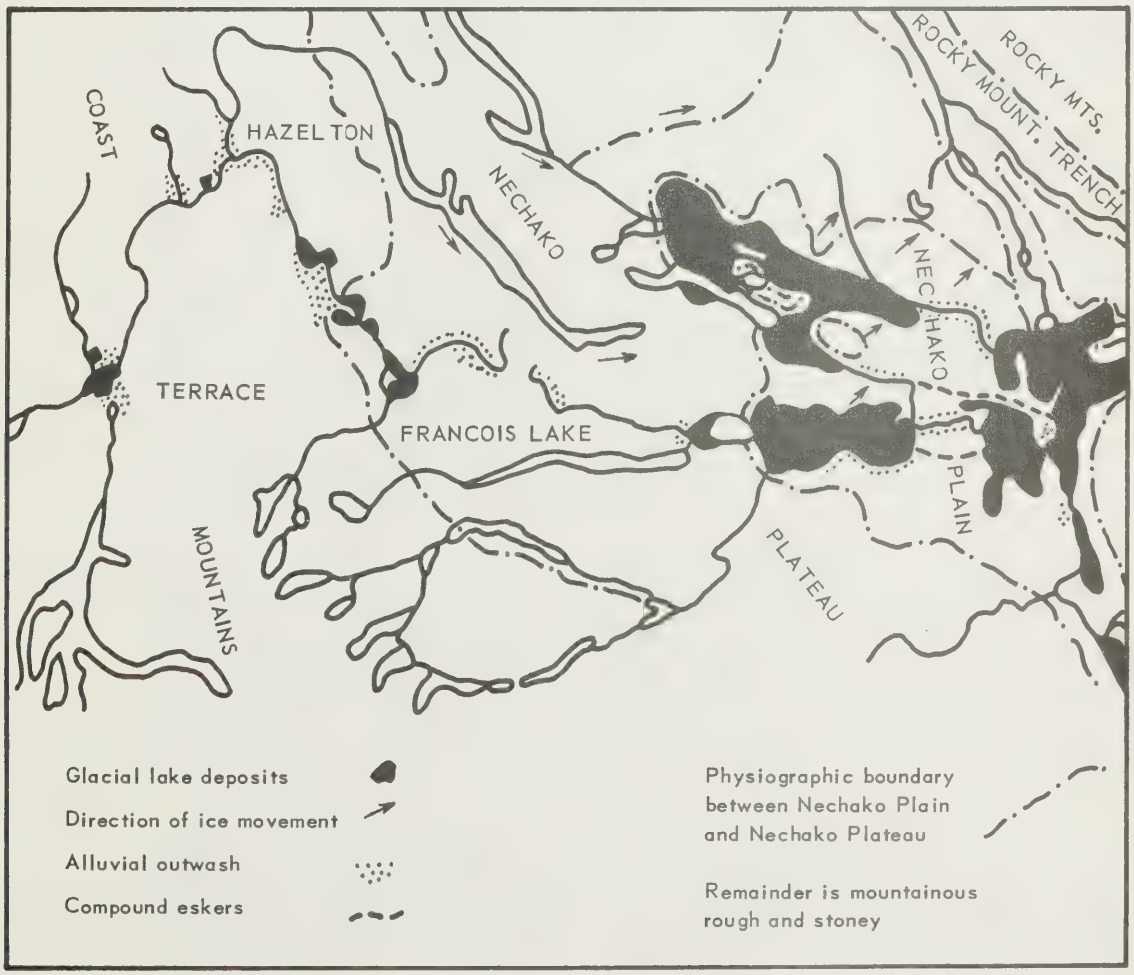

Figure 2 - Illustration of the physiographic divisions and the glacial geology of the central interior areas.
(From Report No. 4 of the British Columbia Soil Survey)

Figure 3.- Stereopair, photographed August 16, 1946, in the vicinity of Terrace, illustrating the Skeena terrace soils. Orchards (O). Young orchard (Y). Small orchards (SO). Fence (F) between rough pasture (RP) and orchard. Farm gardens (GA). Grain (G). Hay (H). Logs lying haphazard in wet area (P). Brush piles (B). Note that drainage can be seen through heavy vegetation (D). Baseball diamonds on public property (DI). Lumber piles (L). Portion of a scaled grid whose unit measurement is 0.625 acres (A). Note that the heavy vegetation is mostly coniferous.

Figure 4.- Stereopair, photographed September 4, 1949, in the vicinity of New Hazelton illustrating the Moricetown and Kispiox terrace soils. Alluvial outwash terraces (T). Small areas of till (BA) recognized by the higher topographical positions in comparison with the surrounding Moricetown terrace soils, the change of the heavy vegetation and drumlinoid appearance. Note that the rocks in the rough mountainous area (RM) have been grooved by the ice and are parallel to the till area. Indian village (IV). Rough pasture (RP).

Figure 5.- Stereopair, photographed September 6, 1955, in the same vicinity of Terrace as in Figure 3. Areas being brush cleared and not cut in 1946 (B). Area cleared and in use and not cut in 1946 (CL). Mill, with sawdust burner, established since 1946 (M). Gravel pit established since 1946 (G). Recreational track and buildings since 1946 (R). New roads and properties since 1946 (N). Portion of a scaled grid whose unit measurement is 2.5 acres (A). Note that the orchards cannot be readily identified in the smaller scaled photos.

Figure 6.- Stereopair, photographed July 7, 1954, in the vicinity of Telkwa, illustrating the Driftwood till soils. Typical gullying (D). Note the heavier vegetation, for conservation purposes, along the gullies. Delta or cone being built in the lake by larger gullies from the hills. Muck or marsh area (M). Note the heavier vegetation towards the edge of the marsh. Hay fields that are being cut (HC). Fence between rough pasture farther up the hill and hays (F). Alluvial soils (AL).

Figure 7.- Stereopair, photographed - August 18, 1946, illustrating typical Driftwood till and shallow muck soils in the vicinity of Ootsa Lake. Note the vegetation in the shallow much area (SMD). Typical Driftwood gullying (D). Rough mountainous soils (RM). Cut hays (HC). Standing hays (H). Note the many hays and pastures that are "in the woods". Area marked as a sample area to be measured for acreage (A).

Figure 8.- Single photo, taken July 19, 1948, in the vicinity southeast of Prince George, illustrating the Pineview clays. Man-made drainage ditch (DM). Areas thinned, ready to be brush cleared (T). Wood piles on cleared lands (W).

Figure 9.- Single photo, taken September 3, 1953, covering the same vicinity as in Figure 8. Note the typical gullies that have cut back across the lake plain. Local muskeg area (M). Note stream that still shows in the muskeg area (ST). The heavier vegetation encroaches from the outer edges of the muskeg area. Areas thinned, ready for brush clearing (T). Brush clearing (B). Areas that have been cleared since 1948 (A) - See Figure 8.

Figure 10.- Stereopair, photographed May 12, 1953, in the vicinity northwest of Vanderhoof, illustrating Vanderhoof clay and Prairiedale silty clay loam. Note the typical gullying on these silty clays. Gullying in a grain field where the vegetation has not yet covered the soil (DI). Note that the drainage has been stabilized by the adjacent hays (D2). Gullies in the heavier vegetation (D). Gullies made by the eroding of the finer soils on the till (DT). Area thinned, ready to be brush cleared (T). Brush clearing (B). New breaking (N). Deciduous (DE) and coniferous (C) vegetation. Shallow muck areas (SM). Braeside loamy sand (BRLS). Note the channel scars in this area. Slumping in the loamy sands (S).

Figure 11.- Single photo, taken October 8, 1951, in the vicinity of McBridge illustrating some interpreted land forms. Rocky mountainous soils - note grooving by ice (R). Rocky mountainous soils - note drumlinoid appearance of grooved rocks and till (RI). Tills in drumlinoid form at the base of the rock area (TI). Large coalescing fans that have been deposited upon the valley fill (F). Stereovision would show the greater height at (A) than (AI). The gullies cutting across the fans and valley fill indicate the finer textures of the soil. The larger stream, flowing from the mountains to the south, has eroded the fan and valley fill considerably (SAL). Recent alluvial of the Fraser River (RAL). Cones deposited on the alluvial of the Fraser River from the adjacent rocky area (C). Muck or peat area (M). Dam that is also crossed by the railroad as part of a switch-back "Y". Turnstile in front of railroad roundhouse (TU). Area thinned, ready for brush clearing (T). Brush clearing (B). New breaking (N) Channel scars in the recent alluvial of the Fraser River.

- - - - -

N.B. All figures are positioned so that "north" is always at the top of the photo except in Figure 11.

Figure 3

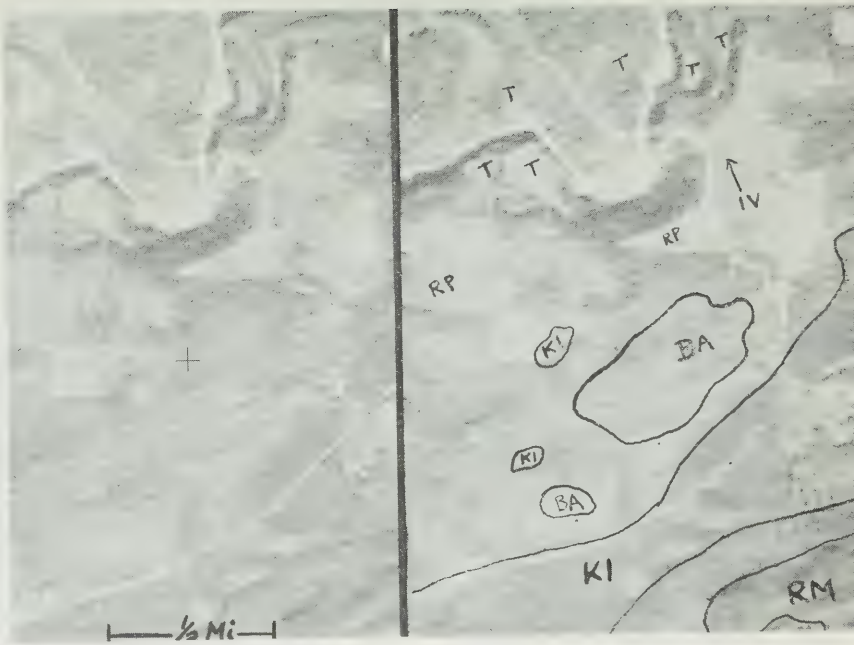

Figure 4

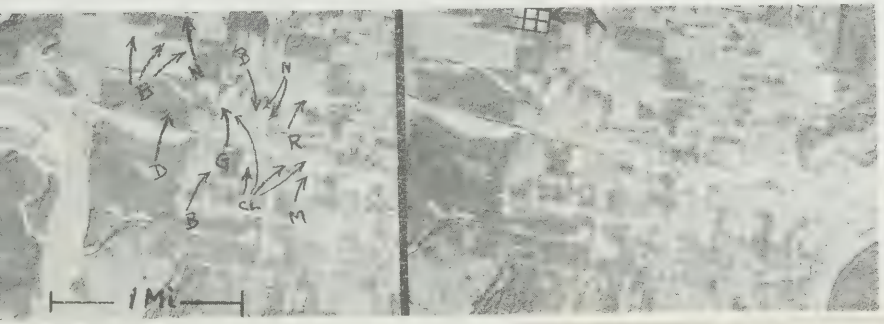

Figure 5

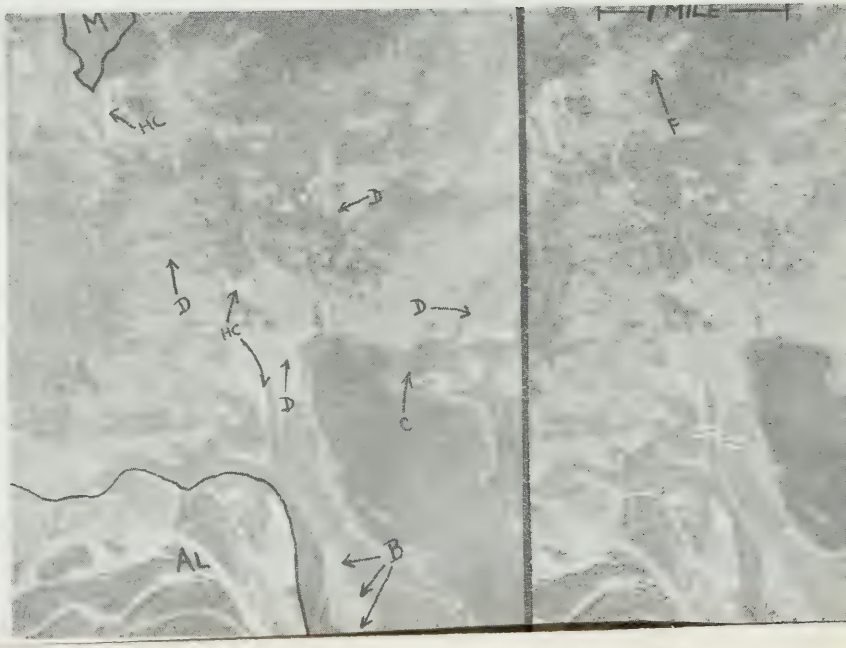

Figure 6

The stereoscopic photos in Figure 4 are to be cut out from the page and reversed so that the true stereoscopic vision can be seen.

Figure 7

Figure 10

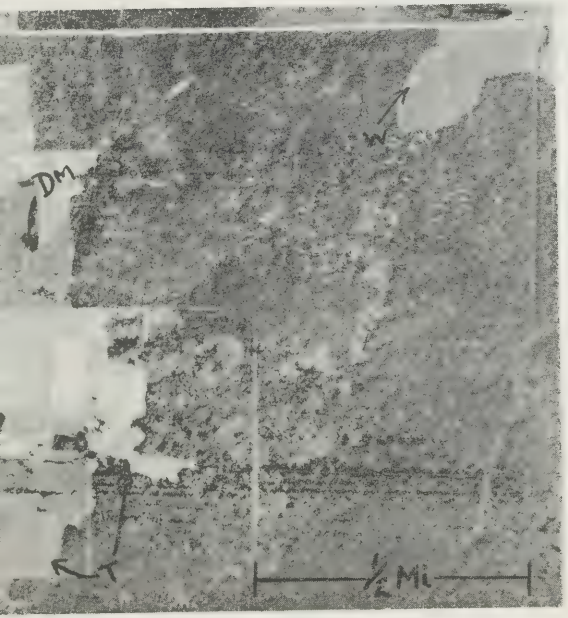

Figure 8

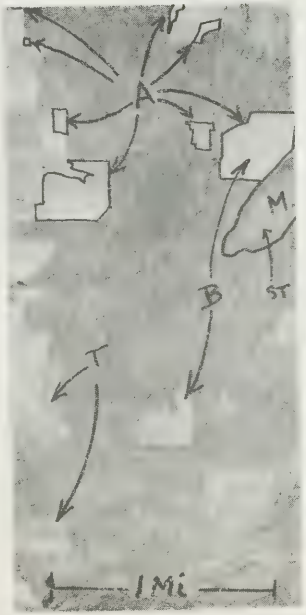

Figure 9

Figure 11

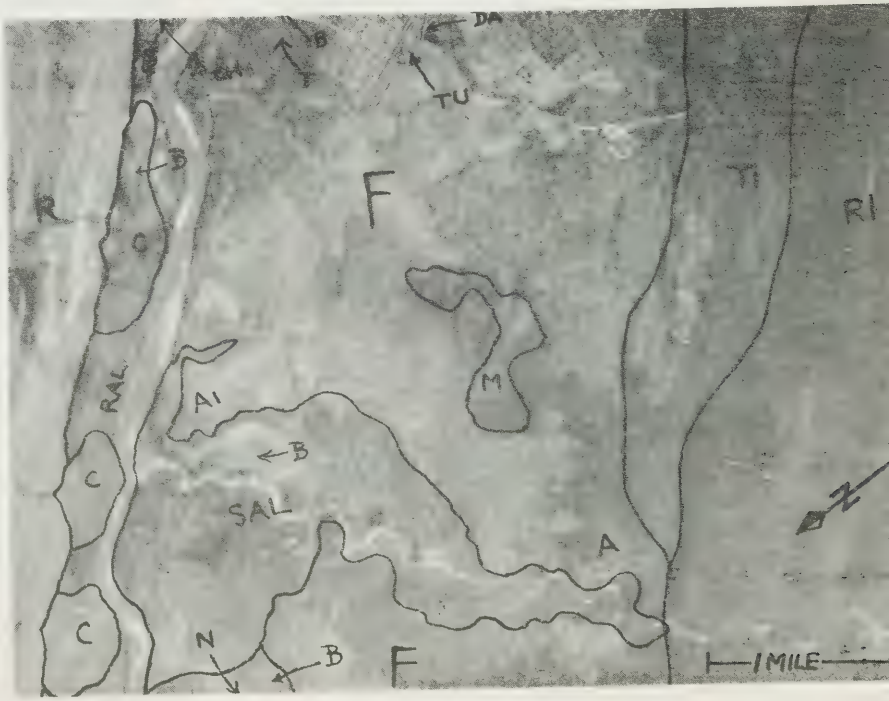

Table 1.- Interpreted Land Use, Terrace-Remo area, showing two separate coverages, one in 1946 and the other in 1955

Area and soils	Hays, pastures, grains, gardens, new breaking		Brush clearing		Thinned, ready for brush clearing		Rough pastures, etc.	
Terrace a/	1946	1955	1946	1955	1946	1955	1946	1955
	- acres -							
Alluvial	138	169	0	0	30	15	59	58
Lakelse clay	156	185	0	14	0	0	0	24
Skeena sandy loam	630	721	0	50	29	17	52	40
Remo								
Alluvial	28	33	0	3	0	0	0	4

a/ Does not include fields in which wireless pylons exist, race tracks and exhibition grounds or the small town dwelling gardens.

Table 2.- Interpreted Land Use, Area from Terrace to Endako, following the Bulkley and Endako Rivers. Smithers to Endako was photographed in 1954 and 1955 and the remainder from 1949 to 1951

Soils	Hays, pastures, grains, gardens, new breaking	Brush clearing	Rough pastures, etc.	Muck or marsh hays, etc.
	- acres -			
Alluvial	6,713	31	799	0
Tills	18,834	165	2,323	138
Braeside sandy loam a/	21	0	16	0
Moricetown " "	3,263	0	0	6
Kispiox " "	65	0	0	20
McCully loam	477	0	0	17
Telkwa clay	560	0	0	0
Rough Mountainous	425	0	0	0

a/ Includes 55 acres of hays in the Kispiox Indian Reserve.

Table 3.- Interpreted Land Use, Tchesinkut Lake and Francois Lake Areas, 1955

Soils	Hays, pastures grains, gardens, new breaking	Rough pastures, etc.
	- acres -	
Alluvial	73	7
Tills	1,344	202

Table 4.- Interpreted Land Use, Noralee, Clemretta, Colleymount Areas, 1951

Soils	Hays, pastures, grains, gardens, new breaking	Rough pastures, etc.	Muck or marsh hays, etc.
	- acres -		
Alluvial	142		
Tills	1,857	228	
Unclassified			148

Table 5.- Interpreted Land Use, Area South of Francois Lake to North of Ootsa Lake a/, 1947

Soils	Hays, pastures, grains, gardens, new breaking	Rough pastures, etc.	Muck or marsh hays, etc.
	- acres -		
Alluvial	29	15	
Tills	10,564	871	
Unclassified			438

a/ Does not include 1,403 acres of hays and pastures, in the woods of this area.

Table 6.- Interpreted Land Use, Vanderhoof vicinity, 1953

Soils	Hays, pastures, grains, gardens, new breaking	Brush clearing	Thinned, ready for brush clearing	Rough pastures, etc.	Muck or marsh hays etc.
	- acres -				
Braeside loamy sand	375	0	3	174	
Prairiedale silty clay loam	4,585	185	0	10	
Vanderhoof clay	3,344	153	565	99	
Nechako silt loam	126	0	0	0	
Unclassified		99(Muck)			258

Table 7.- Interpreted Land Use, Area from Endako to Bednesti (not including Vanderhoof vicinity), along Stuart River, along Nechako River from Isle Pierre to Chilako, Greer Creek Junction with Nechako River and along Chilako River to Junction of Nechako River. Areas were photographed from 1947 to 1955

Soils	Hays, pastures, grains, gardens, new breaking	Brush clearing	Thinned, ready for brush clearing	Rough pastures, etc.	Muck or marsh hays etc.
		- acres -			
Tills	41	0	0	13	
Nechako silt loam	3,023	345	119	13	
Vanderhoof clay a/	3,041	238	215	48	
Nulki clay	726	20	0	0	
Pineview clay	43	0	0	0	
Prairiedale silty clay loam	291	0	0	0	
Braeside loamy sand	303	0	0	0	
Maxes " "	128	0	3	0	
Giscome gravelly sandy loam	70	0	8	0	
Eena sandy loam	2	0	0	0	
Saxton loamy sand	58	0	0	4	
Fraser silt loam	666	1	0	62	
Alluvial	100				
Unclassified		133(Muck)	14(Muck)		2,242

a/ Does not include 98 acres of hays and 27 acres of buildings on the clays, and 58 acres of muck or marsh hays in the Stoney Creek Indian Reserve.

Table 8.- Interpreted Land Use, Chief Lake area, 1953

Soils	Hays, pastures, grains, gardens, new breaking	Brush clearing	Rough pastures, etc.	Muck or marsh hays, etc.
		- acres -		
Bednesti silt loam	583	131	123	
Pineview clay	154	11	0	
Eena sandy loam	70	0	0	
Eena loamy sand	28	15	0	
Unclassified				97

Table 9.- Interpreted Land Use, Prince George and Reid Lake Areas. Two separate coverages are shown, one in 1948 and the other in 1953

Area and soils a/b/	Hays, pastures, grains, gardens, new breaking		Brush clearing		Thinned, ready for brush clearing		Rough pastures, etc.		Muck or marsh hays, etc.	
	1948	1953	1948	1953	1948	1953	1948	1953	1948	1953
	- acres -									
Prince George Area										
Pineview clay	5,502	7,429	852	817	335	43	221	433		
Bednesti silt loam	65	281	30	27	0	0	14	6		
Fraser silt loam	1,302	1,545	238	190	312	0	140	219		
Eena sandy loam	343	350	72	6	0	0	3	3		
Eena loamy sand	51	39	0	7	5	0	21	0		
Giscome gravelly sandy loam	87	67	3	17	13	17	26	12		
Saxton loamy sand	27	127	8	28	10	0	0	0		
Unclassified									157	117
Indian Reserve No. 2										
Fraser silt loam	143	154	4	0	30	0	8	25	56	38
Reid Lake Area										
Pineview clay	121	305	22	0	41	89	0	27		
Bednesti silt loam	330	427	20	93	26	0	6	19		
Eena sandy loam	426	479	0	2	33	0	0	47		
Unclassified									91	47

a/ Does not include the pocket soils associated with the tills on the uplands to the west of Prince George. They included 587 acres of hays, etc., and 47 acres of brush clearing on Pineview clay in 1953. This acreage does not appear in the 1948 photos.

b/ The Experimental Farm to the east of Prince George had 417 cultivated acres and 15 acres of brush clearing on Pineview clay in 1953. In 1948 there were 334 acres with no brush clearing. These are not included in the table.

Table 10.- Interpreted Land Use, Area from Red Rock Lake to Hixon. Two separate coverages are shown - one in 1948 and the other in 1954

Soils	Hays, pastures, grains, gardens, new breaking		Brush clearing		Thinned, ready for brush clearing		Rough pastures, etc.	
	1948	1954	1948	1954	1948	1954	1948	1954
	- acres -							
Fraser silt loam	473	770	87	0	64	0	0	0
Saxton loamy sand	77	201	9	20	4	0	13	0
Pineview clay	1,086	1,900	137	153	182	0	15	0

Table 11.- Interpreted Land Use, Area in the Vicinity of Willow River village.[a] Two separate coverages are shown - one in 1948 and the other in 1952

Soils	Hays, pastures, grains, gardens, new breaking		Rough pastures, etc.	
	1948	1952	1948	1952
	- acres -			
Fraser silt loam	67	80	15	15
Bednesti silt loam	0	6	0	0

a/ Does not include the village buildings.

Table 12.- Interpreted Land Use, Salmon Valley area, 1953

Area and soils	Hays, pastures, grains, gardens, new breaking	Brush clearing	Thinned, ready for brush clearing	Rough pastures, etc.	Muck or marsh hays etc.
	- acres -				
Summit Lake to Salmon Valley					
Pineview clay	403	48	0	23	
Salmon Valley vicinity					
Fraser silt loam	474	31	133	8	
Giscome gravelly sandy loam	351	11	46	0	
Pineview clay	1,430	90	5	0	
Unclassified					5

Table 13.- Interpreted Land Use, Giscome Rapids and Eaglet Lake to Hansard Lake Areas, 1955 and 1953 respectively

Area and soils	Hays, pastures, grains, gardens, new breaking	Brush clearing
	- acres -	
Vicinity, north of Giscome Rapids along Fraser River on Fraser silt loam, 1955	50	
Eaglet Lake to Hansard Lake, including fans on north shore of Eaglet Lake, 1953	261	49

Table 14.- Interpreted Land Use, Area from Longworth to Legrand along the Fraser River, 1951

Area[a] and soils	Hays, pastures, grains, gardens, new breaking	Brush clearing	Rough pastures, etc.	Muck or marsh hays, etc.
	- acres -			
Legrand to Longworth on Fraser River				
Recent river alluvial	484	162	352	
Granular terraces	140	0	0	
Unclassified				22
Longworth village vicinity				
Recent river alluvial	115	0	0	
Granular terraces	47	0	0	
Penny vicinity [b]				
Recent river alluvial	97	0	0	

[a] No soil reconnaissance map was available but the land form was interpreted.
[b] Does not include the 64 acres occupied by the Penny dwellings and lumber mill.

Table 15.- Interpreted Land Use, Area in the Vicinity of McBride and Lamming Mills, 1951 [a]

Land form	Hays, pastures, grains, gardens, new breaking	Brush clearing
	- acres -	
Recent river alluvial	585	59
Parallel drainage that has eroded across the slope indicates the finer textured surface soils	2,654	329

[a] Does not include the 70 acres on which the McBride dwellings are located and the 59 acres used by the rail yards.

Table 16.- Interpreted Land Use, Area from Eddy to Tete Jaune along the Fraser River in 1951

Land form [a/]	Hays, pastures, grains, gardens, new breaking	Brush clearing	Thinned, ready for brush clearing
	- acres -		
Alluvial cones deposited on recent river alluvial	118	19	0
Alluvial fans deposited on well drained terraces	362	29	0
Recent river alluvial	642	37	0
Granular terraces	908	203	16
Eroded granular terraces	129	10	0

a/No soil reconnaissance map was available but land form was interpreted.